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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KEEHAN, CHRISTOPHER M

ART UNIT

PAPER NUMBER

1712

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/699,298

Applicant(s)

DE ET AL.

Examiner

Christopher M. Keehan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/31/03, 6/17/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Examiner's Comments

There are two claim 23's. The second claim 23 has been treated as claim 24.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1 and 2, on pages 57, 59, 60, and 61, applicant has claimed structures that are not clearly defined. For example, in Structures (IA), (IB), and (IC), applicant has claimed a carboxylic group with parentheses. However, it is not clear what is meant by the parentheses. Normally, this would indicate a polymeric chain but there is no indication that this is the case. Structures (III), (IV), and (VI) also contain these parentheses (pages 59 and 60).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 7, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bonafini, Jr., et al., hereinafter Bonafini et al. (6,586,548 B2). The examiner is relying on the provisional application date of Bonafini et al., which, upon review, supports the cited application. Bonafini et al. disclose Structure (I) comprising one or more repeating units selected from the group as claimed (col.3, line 33-col.4, line 14), and a second repeating unit as claimed (col.5, line 66-col.6, line 53).

Claims 1, 2, 6, 7, 17, 18, 22, 23, 27, 28, 38, 39, 44, 45, 49, 50, 60, 61, and 65-67 are rejected under 35 U.S.C. 102(b) as being anticipated by Gonsalves (US 2002/0182541 A1). The examiner is relying on the provisional application date of Gonsalves, which, upon review, supports the cited application. Gonsalves discloses Structure (I) comprising one or more repeating units selected from the group as claimed and a second repeating unit as claimed (sections 0060-0062, 0068-0074, section 0079, and Figure 1).

Regarding claims 22, 23, 27, 28, 38 and 39, Gonsalves discloses a photosensitive composition comprising the copolymer as claimed, a photoacid generator, and a solvent (Example 14 and Table 4).

Regarding claims 44, 45, 49, 50, 60, 61, and 65-67, Gonsalves discloses the process and substrate as claimed (Example 19).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonafini et al. Bonafini et al., as applied above, are as set forth and incorporated herein. Bonafini et al. do not appear to specifically disclose a weight average molecular weight and level of silicon as claimed. However, Bonafini et al. do disclose adding monomer levels of the polysilsesquioxane at 5 to 60% by weight of the monomeric mixture to provide copolymers with sufficient rigidity and hardness(col.5, lines 58-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a variety of amounts of polysilsesquioxane, including an amount that would produce a weight average molecular weight and level of silicon included in applicant's claimed ranges, through routine experimentation and optimization. A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 3, 10-12, 24, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonsalves. Gonsalves, as applied above, is as set forth and incorporated herein. Gonsalves does not appear to specifically disclose a weight

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average molecular weight and level of silicon as claimed. However, Gonsalves does disclose adding monomer levels of the polysilsesquioxane at 1 to about 40% by weight (section 0063) to increase their reactive ion etch resistance (section 0064). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a variety of amounts of polysilsesquioxane, including an amount that would produce a weight average molecular weight and level of silicon included in applicant's claimed ranges, through routine experimentation and optimization. A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 24 and 31-33, Gonsalves discloses a photosensitive composition comprising the copolymer as claimed, a photoacid generator, and a solvent (Example 14 and Table 4).

Allowable Subject Matter

Claims 4, 5, 8, 9, 13-16, 19-21, 25, 26, 29, 30, 34-37, 40-43, 46-48, 51-59, 62-64 and 68 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Regarding claims 22-68, these claims are dependent on claim 22. Bonafini et al. and Gonsalves do not teach or disclose the instantly claimed limitations.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Keehan whose telephone number is (571) 272-1087. The examiner can normally be reached on Monday-Friday, from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Keehan
September 23, 2004

Christopher Keehan
Art Unit 1712
C. Keehan